are often forced to seek care in systems that are not structured to meet their needs. For example, many HIV clinics have inflexible and inconvenient hours, long waiting times, and few staff members from the same racial or ethnic groups as the patients.

As antiretroviral medications become more widely available in the developing world, a major challenge will be finding ways not simply to dole out medications but also to simultaneously address the broader context. In both Thandi's world and Donna's, cultural, economic, and social structures must be changed to allow women more viable life options. Throughout the world, physicians can assist in this process by advocating a multidisciplinary approach to treatment and prevention that would address women's life circumstances along with their medical needs. Only when such change has been effected will HIV-infected women be able to obtain and benefit optimally from appropriate treatment, and only then will uninfected women be able to protect themselves from HIV infection and secure their own well-being.

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4. Shapiro MF, Morton SC, McCaffrey DF, et al. Variations in the care of HIV-infected adults in the United States: results from the HIV Cost and Services Utilization Study. JAMA 1999;281:2305-15.

Individual Rights versus the Public's Health — 100 Years after *Jacobson* v. *Massachusetts*

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> We have on our statute book a law that compels . . . a man to offer up his body to pollution and filth and disease; that compels him to submit to a barbarous ceremonial of blood-poisoning, and virtually to say to a sick calf, "Thou art my savior: in thee do I trust. . . ."
>
> — Brief of the Defendant, *Commonwealth* v. *Jacobson*, 183 Mass. 242 (1903)

> Upon the principle of self-defense, of paramount necessity, a community has the right to protect itself against an epidemic of disease which threatens the safety of its members.
>
> — Supreme Court of the United States, *Jacobson* v. *Massachusetts*, 197 U.S. 11 (1905)

On February 20, 1905, ruling in *Jacobson* v. *Massachusetts*, the U.S. Supreme Court upheld the right of the city of Cambridge, Massachusetts, to mandate vaccination against smallpox. Rejecting the contention that mandatory vaccination violated an individual's rights to due process and equal protection as guaranteed by the 14th Amendment of the Constitution, the Court held that states may limit individual liberty in the service of well-established public health interventions. For 100 years, this seminal opinion has served as the constitutional foundation for state actions limiting liberty in the name of public health. Today, as physicians, policymakers, and public health officials contemplate the use of law to protect the public from emerging and reemerging infectious diseases as well as chronic diseases and other threats, it is instructive to revisit *Jacobson* and consider the lessons offered by the facts behind the case.

The case arose from a 1902 outbreak of smallpox. The Cambridge Board of Health voted, pursuant to a state statute, to require the vaccination of all residents who had not been vaccinated since March 1897. On March 15, 1902, Reverend Henning Jacobson refused to be vaccinated. He was convicted and fined $5. His conviction was upheld by both the trial courts and the state's Supreme Judicial Court.

Writing for the U.S. Supreme Court, Justice John Marshall Harlan noted that the defendant was concerned about the safety of vaccination. The Court,

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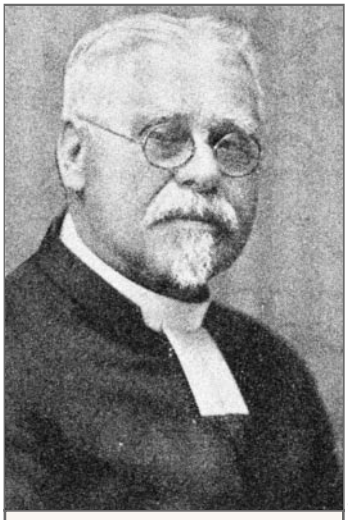
however, concluded that Jacobson's individual objection need not stand in the way of the city's efforts to use a well-regarded intervention to protect the public from a deadly epidemic. This holding has since provided constitutional support not only for vaccination laws, but also for many other public health laws, such as those requiring the use of motorcycle helmets. At the same time, Justice Harlan's observation that state public health laws may not be used in an "arbitrary and oppressive" manner, and that the constitutional rule might be different if the state of a person's health made it "cruel and inhumane" to require vaccination, has been read as establishing potential legal limits on state public health actions.

The facts behind *Jacobson* shed additional light on the Court's opinion and on current debates about the use of law to protect public health. These previously untold facts remind us that resistance to public health initiatives is often neither isolated nor idiosyncratic; rather, resistance can result from social, religious, and ideological factors that public health officials must consider when they use their constitutional authority. In addition, the *Jacobson* story illustrates the critical role of public trust in ensuring the success of a public health campaign.



Courtesy of Evangelical Lutheran Church in America.

The Reverend Henning Jacobson.

By 1902, vaccination was well established in Massachusetts. Nevertheless, smallpox remained a persistent visitor: in 1900, more than 100 cases were reported in the state; in 1901, there were 773 cases and 97 deaths, and in 1902, 2314 cases and 284 deaths.

In response, local public health officials resorted to a variety of measures, many of which were scientifically sound but not all of which were apt to inspire public trust. For example, on March 15, 1902, Boston public health doctors, accompanied by guards, descended on the railroad yards and forcibly vaccinated "Italians, negroes and other employees."[1] In nearby Cambridge, a heated political battle brewed over the mayor's nominations for the board of health. It was in this contentious climate, in which politicians and public health officials debated and vulnerable groups were targeted, that Jacobson and at least three others, including a city clerk named Albert Pear, refused to be vaccinated and were prosecuted.[2]

At the time, vaccination was highly regarded in the medical community. Nevertheless, opposition to it was widespread and long-standing. "Antivaccinationism" had many roots, including religious beliefs and concern about civil liberties, as well as skepticism about medicine. A focal point for the opposition was the British Anti-Vaccination League, which had strong links to New England.

We do not know all the reasons why Jacobson resisted vaccination, but they probably resembled those motivating other resisters. Born in Yllestad, Sweden, in 1856, Jacobson immigrated to the United States in 1870 and was called by the Church of Sweden Mission Board to help found the Augustana Lutheran Church in Cambridge in 1892.[3] Known as a charismatic preacher and a community leader, Jacobson practiced a form of pietism in which spirituality was infused into everyday life. That pietism probably influenced his resistance to vaccination. His status as an immigrant and as a member of a minority religion may also have widened the gulf between him and the Cambridge Board of Health.

In the state courts, Jacobson and Pear were represented by Henry Ballard of Vermont and the Harvard-trained James W. Pickering, who would later win fame as the oldest U.S. soldier in World War I.[4] It is doubtful that the impoverished Jacobson could have afforded the services of Pickering and Ballard. However, Pickering was associated with the Anti-Vaccination League and lived a few blocks from one of its leaders, Dr. Immanuel Pfeiffer, who had become infamous in February 1902, when he contracted smallpox after visiting Boston's smallpox hospital on a dare from the director of the Boston Board of Health.[5] It is therefore likely that Jacobson's resistance was supported by Pickering and organized antivaccinationists.

In their brief before the Massachusetts Supreme Judicial Court, Pickering and Ballard argued that the state had exceeded the bounds of its police power and that the statute was socialist and violated natural rights. Without alluding to the First Amendment,

which had not yet been interpreted as applying to the states, their brief was filled with religious rhetoric. They ended their arguments by asking the court, "Can the free citizen of Massachusetts, who is not yet a pagan, nor an idolator, be compelled to undergo this rite and to participate in this new — no, revived — form of worship of the Sacred Cow?" As this religious allusion suggests, the bovine origin of the smallpox vaccine, little modified since Jenner's day, was especially disturbing from Jacobson's religious viewpoint. The courts, however, clearly viewed vaccination as an appropriate limitation on individual liberty during a deadly epidemic.

FOUR PROSECUTIONS BY BOARD OF HEALTH.

Judge McDaniel Imposes a Fine of $5.00 Upon Those Who Refuse To Be Vaccinated—One Pays, the Others Appeal.

Refusal to be vaccinated is going to be a costly proceeding in Cambridge if the board of health has its way. The board is determined that citizens shall submit to its ordinances or take the consequences, and to emphasize its determination it had four citizens before the third district court Wednesday morning, charged with refusal to be vaccinated. Each one of the four was fined $5 by Associate Justice McDaniel, who occupied the bench in the place of Judge Almy. The court did not make much on the operation, however, since none of the fined

Headline from the *Cambridge Chronicle*, July 26, 1902.

Courtesy of the Evangelical Church in America.

Much remains unknown about the beliefs of Jacobson, Pear, Pickering, and Ballard, including whether they all approached the question of vaccination from the same vantage point. Nevertheless, as we consider public health interventions today — whether school-based mandatory vaccination laws, vaccine rationing schemes, or bans on indoor smoking — we would do well to recall *Jacobson*. Although much has changed in the past century, many of the conflicts and tensions involved in the case remain unresolved. We continue to debate the relationship between liberty and public health. Like vaccination laws, isolation or quarantines imposed for communicable diseases and laws about reporting sexually transmitted diseases rely on the state police power affirmed in *Jacobson*. Each such legal measure limits the rights of individuals in the name of public health, and each is widely accepted as an important tool by the public health community.

Since *Jacobson*, we have come to recognize that although states may restrain liberty in order to protect public health, there are constitutional limits to public health powers. The legal question is seldom black and white: whether a law establishes a quarantine or a partner-notification scheme, it is critical to consider its scientific justification and the manner in which it is undertaken.

Moreover, the story behind *Jacobson* makes clear that legal power alone cannot protect public health. In 1902, smallpox was a dreaded disease, and the efficacy of vaccination had long been established. Nevertheless, there were many resisters, including some whose objections were deeply and sincerely held. Today, even with clear scientific evidence of the benefits of childhood vaccination, there remains resistance to state laws requiring it. As in 1902, this resistance stems from many sources, including fears about the safety of vaccination (many of which are spread by information available over the Internet), libertarianism, and religious faith. Public health and medical officials must appreciate that different social groups often view public health interventions from different perspectives — which must be understood and respected if public health measures are to gain widespread acceptance. Unless the medical and public health communities gain the trust of the diverse public, the legal power affirmed in *Jacobson* will remain insufficient to safeguard the public's health.

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2. Four prosecutions by Board of Health. Cambridge Chronicle. July 26, 1902:4.
3. Hagglund SG. My church: an illustrated Lutheran manual. Vol. XVII. Rockland, Ill.: Augustana Book Concern, 1931:160-3.
4. Student file of James W. Pickering. Cambridge, Mass.: Harvard University Archives.
5. Pfeiffer has smallpox. Boston Herald. February 9, 1902:1.